(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



1 1 E DE 1911 DE 1911

(43) International Publication Date 16 October 2003 (16.10.2003)

PCT

(10) International Publication Number WO 03/085323 A1

(51) International Patent Classification⁷: F23L 15/00

F23J 1/02,

(21) International Application Number: PCT/EP03/01831

(22) International Filing Date: 7 April 2003 (07.04.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: MI2002A000744 9 April 2002 (09.04.2002) IT

(71) Applicant (for all designated States except US): MAGA-LDI RICERCHE E BREVETTI S.R.L. [IT/IT]; Via Irno, 219/bis, I-84135 Salerno (IT).

(72) Inventor; and

(75) Inventor/Applicant (for US only): MAGALDI, Mario [IT/IT]; Viale del Bosco, 22, I-84100 Salerno (IT).

(74) Agent: RICCARDI, Sergio; Via M. Melloni, 32, I-20129 Milano (IT).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

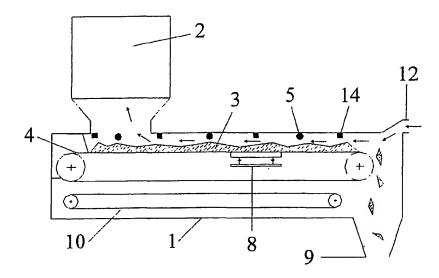
(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: AIR AND WATER CONVEYOR/COOLER FOR HOT LOOSE MATERIALS



(57) Abstract: The present invention regards a conveyor/cooler for hot loose materials produced by boilers and various industrial processes, mainly comprising a sealed metal container (1) connected to a boiler (2) or to an incinerator from which, thanks to the gravitational effect, the material (3) that leaves the combustion chamber falls. Inside of said container (1) a metal conveyor belt (4) is placed whereon the hot loose material (3) to be cooled is placed. The cooling of the material (3) occurs through the feeding of an air flow picked up from the outside environment integrated with atomized water sprinkled on the hot material (3) through a system of injecting nozzles (5) installed inside of the metal container (1).

VO 03/085323



Inter nai Application No PCT/EP 03/01831

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 F23J1/02 F23L15/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Documentation searched other than minimum documentation to the extent that such documents are included. In the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
х	US 6 230 633 B1 (MAGALDI MARIO ET AL) 15 May 2001 (2001-05-15)	1-8
Y	10 (lag 2001 (2001 00 10)	11,12, 16-18
	column 2, line 30 - line 35	
	column 2, line 49 - line 60	
	column 3, line 25 - line 38 column 4, line 13 - line 30	į .
	column 4, line 42 - line 63	
	column 5, line 34 - line 41	
	column 5, line 59 -column 6, line 5	
A		9,10
v	EP 0 931 981 A (MAGALDI RICERCHE E	16-18
	BREVETTI S) 28 July 1999 (1999-07-28)	10-10
	column 3, line 45 -column 4, line 20 figure 5	
	-/	

Y Further documents are listed in the continuation of box C.	Patent family members are listed in annex.
Special categories of cited documents: A document defining the general state of the art which is not considered to be of particular relevance E earlier document but published on or after the international filing date C document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) O document referring to an oral disclosure, use, exhibition or other means P document published prior to the International filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family
Date of the actual completion of the international search 16 July 2003	Date of mailing of the international search report 23/07/2003
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentiaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Mougey, M

INTERNATIONAL SEARCH REPORT

Intermedia Application No PCT/EP 03/01831

		TC1/ET 03/01631
C.(Continue	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	
Category •	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	FR 2 731 064 A (GEC ALSTHOM STEIN IND) 30 August 1996 (1996-08-30) page 7, line 5 - line 11 page 7, line 25 -page 8, line 8	11
Υ	EP 0 972 988 A (VON ROLL UMWELTTECHNIK AG) 19 January 2000 (2000-01-19) column 7, line 13 - line 26	12
X I	DE 37 31 140 A (SEKIMIC KRESIMIR DIPL ING ;SEKIMIC JOSIP (YU)) 24 March 1988 (1988-03-24) column 2, line 45 - line 51 column 7, line 45 - line 53	1
A	WO 98 53252 A (GONG HUIQIN) 26 November 1998 (1998-11-26) abstract	1,12
А	DE 642 967 C (SEYBOTH FEUERUNG G M B H) 20 March 1937 (1937-03-20) page 1, line 53 -page 2, line 4	1
A	WO 01 55659 A (JANKKILA MARTTI ;NIEMELAE PEKKA (FI); OUTOKUMPU OY (FI); VAEAENAEN) 2 August 2001 (2001-08-02) claim 1 page 2, paragraph 3 page 4, paragraph 1	1,16



Information on patent family members

Intermenal Application No PCT/EP 03/01831

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
US 6230633	B1	15-05-2001	IT	MI951310		19-12-1996
			DE	69603965		30-09-1999
			DE	69603965		20-04-2000
			DK	836697		27-03-2000
			EP	0836697		22-04-1998
			GR	3031935	T3	31-03-2000
			JP	11508026	T	13-07-1999
			PL	324112		11-05-1998
			SK	175597		07-10-1998
			AT	183817		15-09-1999
			CA	2224145		03-01-1997
			CN	1188533		22-07-1998
			CZ	9704061		15-07-1998
			WO	9700406		03-01-1997
			ES	2138353		01-01-2000
						01-01-2000
EP 0931981	Α	28-07-1999	IT	MI980051	A1	15-07-1999
			EP	0931981	A2	28-07-1999
FR 2731064	Α	30-08-1996	FR	2731064	A1	30-08-1996
EP 0972988	Α	19-01-2000	СН	692773		31-10-2002
			DE	59904259	D1	20-03-2003
			EP	0972988	A1	19-01-2000
			JP	2000081208		21-03-2000
DE 3731140	Α	24-03-1988	YU	161886	A1	31-12-1988
			CS	8706626	A2	15-10-1991
			DE	3731140	A1	24-03-1988
			HR	930286		28-02-1997
			HR	940188		30-04-1996
			PL	267800		21-07-1988
			SŪ	1644726		23-04-1991
WO 9853252	Α	26-11-1998	AU	7519098	Α	11-12-1998
			WO	9853252		26-11-1998
			CN	1095534		04-12-2002
DE 642967	С	20-03-1937	NONE			
WO 0155659	Α	02-08-2001	FI	20000200	Α	01-08-2001
			AU	3028201		07-08-2001
			BR	0107924		10-12-2002
			CN	1397003		12-02-2003
			EP	1252473		30-10-2002
			WO	0155659		02-08-2001
				20023624		30-07-2002
			NO US	2003054315		20-03-2003